

2002

SEQUENCE LISTING

<110> Estell, David A.
Harding, Fiona A.

<120> PROTEINS PRODUCING AN ALTERED IMMUNOGENIC RESPONSE AND
METHODS OF MAKING AND USING THE SAME

<130> A-08599/DJB/LAV

<140> US 09/506,135
<141> 2000-03-08

<150> US 09/060,872
<151> 1998-04-15

<160> 236

<170> PatentIn Ver. 2.1

<210> 1
<211> 1425
<212> DNA
<213> Bacillus amyloliquefaciens

<220>
<221> mat_peptide
<222> (417)..(1425)

<230>
<231> CDS
<232> (36)..(1244)

<240>
<241> misc_feature
<242> (582)..(584)
<243> The nnn at positions 582 through 584 which in a
preferred embodiment (aat) is to code for
asparagine, but which may also code for proline.

<250>
<251> misc_feature
<252> (585)..(587)
<253> The nnn at positions 585 through 587 which in a
preferred embodiment (cct) is to code for proline,
but which may also code for asparagine.

<260>
<261> misc_feature
<262> (597)..(599)
<263> The nnn at positions 597 to 599 which in a
preferred embodiment (aac) is to code for
asparagine, but which may also code for aspartic acid.

<270>
<271> misc_feature
<272> (678)..(680)
<273> The nnn at positions 678 through 680 which in a
preferred embodiment (gca) is to code for
alanine, but which may also code for serine.

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<220>
 <221> misc feature
 <222> (681)..(683)
 <223> The nnn at positions 681 through 683 which in a preferred embodiment (tca) is to code for serine, but which may also code for alanine.

 <220>
 <221> misc feature
 <222> (708)..(710)
 <223> The nnn at positions 708 through 710 which in a preferred embodiment (gct) is to code for alanine, but which may also code for aspartic acid.

 <220>
 <221> misc feature
 <222> (711)..(713)
 <223> The nnn at positions 711 through 713 which in a preferred embodiment (gac) is to code for aspartic acid, but which may also code for alanine.

 <220>
 <221> misc feature
 <222> (898)..(899)
 <223> The nnn at positions 898 through 899 which in a preferred embodiment (act) is to code for threonine, but which may also code for serine.

 <220>
 <221> misc feature
 <222> (891)..(893)
 <223> The nnn at positions 891 through 893 which in a preferred embodiment (tcc) is to code for serine, but which may also code for threonine.

 <220>
 <221> misc feature
 <222> (1167)..(1169)
 <223> The nnn at positions 1167 through 1169 which in a preferred embodiment (gaa) is to code for glutamic acid, but which may also code for glutamine.

<400> 1
 ggtctactaa aatattatc catactatac aattaatata cagaataatc tgtctattgg 60

 attctgtca aatgaaaaaa aggagaggat aaaga atg agc ggc aaa aaa gta 113
 Met Arg Gly Lys Lys Val
 -105

 tgg atc agt ttg ctg ttt gct tta ggc tta atc ttt acg atg ggc ttc 161
 Trp Ile Ser Leu Leu Phe Ala Leu Ala Leu Ile Phe Thr Met Ala Phe
 -100 -95 -90

 ggc agc aca tcc tct gcc cag ggc gca ggg aaa tca aac ggc gaa aag 209
 Gly Ser Thr Ser Ser Ala Gln Ala Ala Gly Lys Ser Asn Gly Glu Lys
 -85 -80 -75

 aca tat att gtc ggg ttt aaa cag aca atg agc acg atg agc gcc gct 257
 Lys Tyr Ile Val Gly Phe Lys Gln Thr Met Ser Thr Met Ser Ala Ala

-55										-50										-55										
aag	aag	aaa	gat	gtc	att	tct	gaa	aaa	ggc	ggg	aaa	gtg	caa	aag	caa	305														
Lys	Lys	Lys	Asp	Val	Ile	Ser	Glu	Lys	Gly	Gly	Lys	Val	Gln	Lys	Gln															
-50										-45										-40										
ttc	aaa	tat	gta	gac	gca	gct	tca	gct	aca	tta	aac	gaa	aaa	gct	gta	353														
Phe	Lys	Tyr	Val	Asp	Ala	Ala	Ser	Ala	Thr	Leu	Asn	Glu	Lys	Ala	Val															
-35										-30										-25										
aaa	gaa	ttg	aaa	aaa	gac	ccg	agg	gtc	gct	tac	gtt	gaa	gaa	gat	cac	401														
Lys	Glu	Leu	Lys	Lys	Asp	Pro	Ser	Val	Ala	Tyr	Val	Glu	Glu	Asp	His															
-20										-15										-10										
gta	gca	cat	ggg	tac	ggg	cag	tcc	gtg	cct	tac	ggc	gta	tca	caa	att	449														
Val	Ala	His	Ala	Tyr	Ala	Gln	Ser	Val	Pro	Tyr	Gly	Val	Ser	Sin	Ile															
-5										-1										1										
aaa	gac	cct	gct	ctg	caa	tct	caa	ggc	tac	act	gga	tca	aat	gtt	aaa	497														
Lys	Ala	Pro	Ala	Leu	His	Ser	Sin	Gly	Tyr	Thr	Gly	Ser	Asn	Val	Lys															
15										20										25										
gta	ggg	gtt	atc	gac	agg	ggt	atc	gat	tct	tct	cat	cct	gat	tta	aag	545														
Val	Ala	Val	Ile	Asp	Ser	Gly	Ile	Asp	Ser	Ser	His	Pro	Asp	Leu	Lys															
30										35										40										
gta	gca	ggc	gga	gac	agg	atg	gtt	cct	tct	gaa	aca	nnn	nnn	ttc	caa	593														
Val	Ala	Gly	Gly	Ala	Ser	Met	Val	Pro	Ser	Glu	Thr	Xaa	Xaa	Phe	Gln															
45										50										55										
gac	nnn	aac	tct	caa	gga	act	caa	gtt	gac	ggc	aca	gtt	ggg	gct	ctt	641														
Asp	Xaa	Asn	Ser	His	Gly	Thr	His	Val	Ala	Gly	Thr	Val	Ala	Ala	Leu															
60										65										70										
aat	aac	tca	atc	ggt	gta	tta	ggc	gtt	ggg	cca	agg	nnn	nnn	cct	tac	689														
Asn	Asn	Ser	Ile	Gly	Val	Leu	Gly	Val	Ala	Pro	Ser	Xaa	Xaa	Leu	Tyr															
80										85										90										
gct	gta	aaa	gtt	ctc	ggt	nnn	nnn	ggt	tcc	ggc	caa	tac	agg	tgg	atc	737														
Ala	Val	Lys	Val	Leu	Gly	Xaa	Xaa	Gly	Ser	Gly	Gln	Tyr	Ser	Trp	Ile															
95										100										105										
att	aac	gga	atc	gag	tgg	ggg	atc	gca	aac	aat	atg	gac	gtt	att	aac	785														
Ile	Asn	Gly	Ile	Glu	Trp	Ala	Ile	Ala	Asn	Asn	Met	Asp	Val	Ile	Asn															
110										115										120										
atg	agg	cct	ggc	gga	cct	tct	ggt	tct	gct	gct	tta	aaa	ggg	gca	gtt	833														
Met	Ser	Leu	Gly	Gly	Pro	Ser	Gly	Ser	Ala	Ala	Leu	Lys	Ala	Ala	Val															
125										130										135										
gat	aaa	ggc	gtt	gca	tcc	ggc	gtc	gta	gtc	gtt	ggg	gca	ggc	ggt	aac	881														
Asp	Lys	Ala	Val	Ala	Ser	Gly	Val	Val	Val	Val	Ala	Ala	Ala	Gly	Asn															
140										145										150										
gaa	ggc	nnn	nnn	ggc	agg	tca	agg	aca	gtg	ggc	tac	cct	ggt	aaa	tac	929														
Glu	Gly	Xaa	Xaa	Gly	Ser	Ser	Ser	Thr	Val	Gly	Tyr	Pro	Gly	Lys	Tyr															
155										160										165										
cct	tct	gtc	att	gca	gta	ggc	gct	gtt	gac	agg	agg	aac	caa	aga	gca	977														
Pro	Ser	Val	Ile	Ala	Val	Gly	Ala	Val	Asp	Ser	Ser	Asn	Gln	Arg	Ala															

175	180	185	
tet ttc tca agc gta gga cct gag ctt gat gtc atg gca cct ggc gta			1025
Ser Phe Ser Ser Val Gly Pro Gln Leu Asp Val Met Ala Pro Gly Val			
190	195	200	
tet atc caa agc acg ctt cct gga aac aaa tac ggg ggc tac aac ggt			1073
Ser Ile Gln Ser Thr Leu Pro Gly Asn Lys Tyr Gly Ala Tyr Asn Gly			
205	210	215	
acg tca atg gca tct cgg cac gtt gcc gga ggg gct gct ttg att ctt			1121
Thr Ser Met Ala Ser Pro His Val Ala Gly Ala Ala Ala Leu Ile Leu			
220	225	230	235
tet aag cac cgg aac tgg aca aac act caa gtc cgc agc agt tta nnn			1169
Ser Lys His Pro Asn Trp Thr Asn Thr Gln Val Arg Ser Ser Leu Xaa			
240	245	250	
aac acc act aca aaa ctt ggt gat tct ttc tac tat gga aaa ggg ctg			1217
Asn Thr Thr Thr Lys Leu Gly Asp Ser Phe Tyr Tyr Gly Lys Gly Leu			
255	260	265	
att aat ata cag gcg gca gct cag taa aacataaaaa accggccttg			1264
Ile Asn Val Gln Ala Ala Ala Gln			
270	275		
gcacggcgag ttttttatt ttctttctc cgcattgttca atcggctcca taatcgacgg			1324
atggctccct ctgaatattt taacgagaaa cgggggggttg acccgggtca gtcccgtaac			1334
gcacagctcc tgaaaagctc caatcgccgc ttccgggttt ccggtcagct caatgcgcta			1444
acggtcgag gcgttttctt gataccggga gacggcattc gtaatcggat c			1495

<110> 1
 <111> 491
 <112> PRT
 <113> Bacillus amyloliquefaciens

<118>
 <121> VARIANT
 <122> (163)...(163)
 <123> Xaa = Asn or Pro

<124>
 <125> VARIANT
 <126> (164)...(164)
 <127> Xaa = Pro or Asn

<128>
 <129> VARIANT
 <130> (168)...(168)
 <131> Xaa = Asn or Asp

<132>
 <133> VARIANT
 <134> (195)...(195)
 <135> Xaa = Ala or Ser

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Ala Leu Lys Ala	Ala Val Asp Lys Ala	Val Ala Ser Gly Val	Val Val
	245	250	255
Val Ala Ala Ala	Gly Asn Glu Gly Kaa Kaa	Gly Ser Ser Ser	Thr Val
	260	265	270
Gly Tyr Pro Gly	Lys Tyr Pro Ser Val Ile	Ala Val Gly Ala	Val Asp
	275	280	285
Ser Ser Asn Gln	Arg Ala Ser Phe Ser	Ser Val Gly Pro	Glu Leu Asp
	290	295	300
Val Met Ala Pro	Gly Val Ser Ile Gln Ser	Thr Leu Pro Gly	Asn Lys
	305	310	315
Tyr Gly Ala Tyr	Asn Gly Thr Ser Met	Ala Ser Pro His	Val Ala Gly
	320	325	330
Ala Ala Ala Leu	Ile Leu Ser Lys His	Pro Asn Trp Thr	Asn Thr Gln
	335	340	345
Val Arg Ser Ser	Leu Kaa Asn Thr Thr	Lys Leu Gly Asp	Ser Phe
	350	355	360
Tyr Tyr Gly Lys	Gly Leu Ile Asn Val	Gln Ala Ala Ala	Gln
	365	370	375

0110-3
 0111-175
 0112- PRT
 0113- Bacillus amyloliquefaciens

0400-3
Ala Gln Ser Val Pro Tyr Gly Val Ser Gln Ile Lys Ala Pro Ala Leu
5 10 15
His Ser Gln Gly Tyr Thr Gly Ser Asn Val Lys Val Ala Val Ile Asp
20 25 30
Ser Gly Ile Asp Ser Ser His Pro Asp Leu Lys Val Ala Gly Gly Ala
35 40 45
Ser Met Val Pro Ser Glu Thr Asn Pro Phe Gln Asp Asn Asn Ser His
50 55 60
Gly Thr His Val Ala Gly Thr Val Ala Ala Leu Asn Asn Ser Ile Gly
65 70 75 80
Val Leu Gly Val Ala Pro Ser Ala Ser Leu Tyr Ala Val Lys Val Leu
85 90 95
Gly Ala Asp Gly Ser Gly Gln Tyr Ser Trp Ile Ile Asn Gly Ile Glu
100 105 110
Trp Ala Ile Ala Asn Asn Met Asp Val Ile Asn Met Ser Leu Gly Gly
115 120 125
Pro Ser Gly Ser Ala Ala Leu Lys Ala Ala Val Asp Lys Ala Val Ala
130 135 140
Ser Gly Val Val Val Val Ala Ala Ala Gly Asn Glu Gly Thr Ser Gly
145 150 155 160
Ser Ser Ser Thr Val Gly Tyr Pro Gly Lys Tyr Pro Ser Val Ile Ala
165 170 175

Val Gly Ala Val Asp Ser Ser Asn Gln Arg Ala Ser Phe Ser Ser Val
 180 185 190
 Gly Pro Glu Leu Asp Val Met Ala Pro Gly Val Ser Ile Gln Ser Thr
 195 200 205
 Leu Pro Gly Asn Lys Tyr Gly Ala Tyr Asn Gly Thr Ser Met Ala Ser
 210 215 220
 Pro His Val Ala Gly Ala Ala Ala Leu Ile Leu Ser Lys His Pro Asn
 225 230 235 240
 Trp Thr Asn Thr Gln Val Arg Ser Ser Leu Glu Asn Thr Thr Thr Lys
 245 250 255
 Leu Gly Asp Ser Phe Tyr Tyr Gly Lys Gly Leu Ile Asn Val Gln Ala
 260 265 270
 Ala Ala Gln
 275

01100 4
 01110 275
 01120 PRT
 01130 Bacillus subtilis

04100 4
 Ala Gln Ser Val Pro Tyr Gly Ile Ser Gln Ile Lys Ala Pro Ala Leu
 1 5 10 15
 His Ser Gln Gly Tyr Thr Gly Ser Asn Val Lys Val Ala Val Ile Asp
 20 25 30
 Ser Gly Ile Asp Ser Ser His Pro Asp Leu Asn Val Arg Gly Gly Ala
 35 40 45
 Ser Phe Val Pro Ser Glu Thr Asn Pro Tyr Gln Asp Gly Ser Ser His
 50 55 60
 Gly Thr His Val Ala Gly Thr Ile Ala Ala Leu Asn Asn Ser Ile Gly
 65 70 75 80
 Val Leu Gly Val Ser Pro Ser Ala Ser Leu Tyr Ala Val Lys Val Leu
 85 90 95
 Asp Ser Thr Gly Ser Gly Gln Tyr Ser Trp Ile Ile Asn Gly Ile Glu
 100 105 110
 Trp Ala Ile Ser Asn Asn Met Asp Val Ile Asn Met Ser Leu Gly Gly
 115 120 125
 Pro Thr Gly Ser Thr Ala Leu Lys Thr Val Val Asp Lys Ala Val Ser
 130 135 140
 Ser Gly Ile Val Val Ala Ala Ala Ala Gly Asn Gln Gly Ser Ser Gly
 145 150 155 160
 Ser Thr Ser Thr Val Gly Tyr Pro Ala Lys Tyr Pro Ser Thr Ile Ala

165										170					175							
Val	Gly	Ala	Val	Asn	Ser	Ser	Asn	Gln	Arg	Ala	Ser	Phe	Ser	Ser	Ala							
			180					185					190									
Gly	Ser	Glu	Leu	Asp	Val	Met	Ala	Pro	Gly	Val	Ser	Ile	Gln	Ser	Thr							
		195					200					205										
Leu	Pro	Gly	Gly	Thr	Tyr	Gly	Ala	Tyr	Asn	Gly	Thr	Ser	Met	Ala	Thr							
		210				215					220											
Pro	His	Val	Ala	Gly	Ala	Ala	Ala	Leu	Ile	Leu	Ser	Lys	His	Pro	Thr							
225					230					235					240							
Trp	Thr	Asn	Ala	Gln	Val	Arg	Asp	Arg	Leu	Glu	Ser	Thr	Ala	Thr	Tyr							
			245						250						255							
Leu	Gly	Asn	Ser	Phe	Tyr	Tyr	Gly	Lys	Gly	Leu	Ile	Asn	Val	Gln	Ala							
		260						265					270									
Ala	Ala	Gln																				
		275																				

0110-5
 0111-274
 0112-FRT
 0113-Bacillus licheniformis

0400-1	Ala	Gln	Thr	Val	Pro	Tyr	Gly	Ile	Pro	Leu	Ile	Lys	Ala	Asp	Lys	Val							
										10					15								
	Gln	Ala	Gln	Gly	Phe	Lys	Gly	Ala	Asn	Val	Lys	Val	Ala	Val	Leu	Asp							
			20						25					30									
	Thr	Gly	Ile	Gln	Ala	Ser	His	Pro	Asp	Leu	Asn	Val	Val	Gly	Gly	Ala							
			35					40					45										
	Ser	Phe	Val	Ala	Gly	Glu	Ala	Tyr	Asn	Thr	Asp	Gly	Asn	Gly	His	Gly							
		50					55					60											
	Thr	His	Val	Ala	Gly	Thr	Val	Ala	Ala	Leu	Asp	Asn	Thr	Thr	Gly	Val							
		65				70					75					80							
	Leu	Gly	Val	Ala	Pro	Ser	Val	Ser	Leu	Tyr	Ala	Val	Lys	Val	Leu	Asn							
				85					90					95									
	Ser	Ser	Gly	Ser	Gly	Ser	Tyr	Ser	Gly	Ile	Val	Ser	Gly	Ile	Glu	Trp							
			100						105					110									
	Ala	Thr	Thr	Asn	Gly	Met	Asp	Val	Ile	Asn	Met	Ser	Leu	Gly	Gly	Ala							
			115					120					125										
	Ser	Gly	Ser	Thr	Ala	Met	Lys	Gln	Ala	Val	Asp	Asn	Ala	Tyr	Ala	Arg							
		130					135					140											
	Gly	Val	Val	Val	Val	Ala	Ala	Ala	Gly	Asn	Ser	Gly	Asn	Ser	Gly	Ser							
145					150					155						160							

Thr Asn Thr Ile Gly Tyr Pro Ala Lys Tyr Asp Ser Val Ile Ala Val
 165 170 175
 Gly Ala Val Asp Ser Asn Ser Asn Arg Ala Ser Phe Ser Ser Val Gly
 180 185 190
 Ala Glu Leu Gln Val Met Ala Pro Gly Ala Gly Val Tyr Ser Thr Tyr
 195 200 205
 Pro Thr Asn Thr Tyr Ala Thr Leu Asn Gly Thr Ser Met Ala Ser Pro
 210 215 220
 His Val Ala Gly Ala Ala Ala Leu Ile Leu Ser Lys His Pro Asn Leu
 225 230 235 240
 Ser Ala Ser Gln Val Arg Asn Arg Leu Ser Ser Thr Ala Thr Tyr Leu
 245 250 255
 Gly Ser Ser Phe Tyr Tyr Gly Lys Gly Leu Ile Asn Val Gln Ala Ala
 260 265 270
 Ala Gln

#210- 6
 #211- 269
 #212- PRT
 #213- Bacillus lentus

#390- 6
 Ala Gln Ser Val Pro Trp Gly Ile Ser Arg Val Gln Ala Pro Ala Ala
 1 5 10 15
 His Asn Arg Gly Leu Thr Gly Ser Gly Val Lys Val Ala Val Leu Asp
 20 25 30
 Thr Gly Ile Ser Thr His Pro Asp Leu Asn Ile Arg Gly Gly Ala Ser
 35 40 45
 Phe Val Pro Gly Glu Pro Ser Thr Gln Asp Gly Asn Gly His Gly Thr
 50 55 60
 His Val Ala Gly Thr Ile Ala Ala Leu Asn Asn Ser Ile Gly Val Leu
 65 70 75 80
 Gly Val Ala Pro Ser Ala Glu Leu Tyr Ala Val Lys Val Leu Gly Ala
 85 90 95
 Ser Gly Ser Gly Ser Val Ser Ser Ile Ala Gln Gly Leu Glu Trp Ala
 100 105 110
 Gly Asn Asn Gly Met His Val Ala Asn Leu Ser Leu Gly Ser Pro Ser
 115 120 125
 Pro Ser Ala Thr Leu Glu Gln Ala Val Asn Ser Ala Thr Ser Arg Gly
 130 135 140
 Val Leu Val Val Ala Ala Ser Gly Asn Ser Gly Ala Gly Ser Ile Ser
 145 150 155 160

Tyr	Pro	Ala	Arg	Tyr	Ala	Asn	Ala	Met	Ala	Val	Gly	Ala	Thr	Asp	Gln
						165				170				175	
Ala	Asn	Asn	Arg	Ala	Ser	Phe	Ser	Gln	Tyr	Gly	Ala	Gly	Leu	Asp	Ile
						180				185				190	
Val	Ala	Pro	Gly	Val	Asn	Val	Gln	Ser	Thr	Tyr	Pro	Gly	Ser	Thr	Tyr
						195				200				205	
Ala	Ser	Leu	Asn	Gly	Thr	Ser	Met	Ala	Thr	Pro	His	Val	Ala	Gly	Ala
						210				215				220	
Ala	Ala	Leu	Val	Lys	Gln	Lys	Asn	Pro	Ser	Trp	Ser	Asn	Val	Gln	Ile
						230				235				240	
Arg	Asn	His	Leu	Lys	Asn	Thr	Ala	Thr	Ser	Leu	Gly	Ser	Thr	Asn	Leu
						245				250				255	
Tyr	Gly	Ser	Gly	Leu	Val	Asn	Ala	Glu	Ala	Ala	Thr	Arg			
						260				265					

<210> 7
 <211> 15
 <212> PPT
 <213> Artificial Sequence

<220>
 <221> Description of Artificial Sequence: Synthetic

Ile	Lys	Asp	Phe	His	Val	Tyr	Phe	Arg	Glu	Ser	Arg	Asp	Ala	Gly
1				5					10					15

<211> 8
 <212> 15
 <213> PPT
 <213> Artificial Sequence

<220>
 <221> Description of Artificial Sequence: Synthetic

Leu	Glu	Gln	Ala	Val	Asn	Ser	Ala	Thr	Ser	Arg	Gly	Val	Leu	Val
1				5					10					15

<211> 9
 <212> 15
 <213> PPT
 <213> Artificial Sequence

<220>
 <221> Description of Artificial Sequence: Synthetic

Ala	Gln	Ser	Val	Pro	Trp	Gly	Ile	Ser	Arg	Val	Gln	Ala	Pro	Ala
1				5					10					15

<210> 10
<211> 15
<212> PPT
<213> Artificial Sequence

<214>
<215> Description of Artificial Sequence: Synthetic

<401> 11
Val Pro Trp Gly Ile Ser Arg Val Gln Ala Pro Ala Ala His Asn
1 5 10 15

<210> 11
<211> 15
<212> PPT
<213> Artificial Sequence

<214>
<215> Description of Artificial Sequence: Synthetic

<401> 11
Gly Ile Ser Arg Val Gln Ala Pro Ala Ala His Asn Arg Gly Leu
1 5 10 15

<210> 13
<211> 15
<212> PPT
<213> Artificial Sequence

<214>
<215> Description of Artificial Sequence: Synthetic

<401> 13
Arg Val Gln Ala Pro Ala Ala His Asn Arg Gly Leu Thr Gly Ser
1 5 10 15

<210> 13
<211> 15
<212> PPT
<213> Artificial Sequence

<214>
<215> Description of Artificial Sequence: Synthetic

<401> 13
Ala Pro Ala Ala His Asn Arg Gly Leu Thr Gly Ser Gly Val Lys
1 5 10 15

<210> 14
<211> 15
<212> PPT
<213> Artificial Sequence

<220>

<23> Description of Artificial Sequence: Synthetic

<40> 14

Ala His Asn Arg Gly Leu Thr Gly Ser Gly Val Lys Val Ala Val
1 5 10 15

<10> 15

<10> 15

<10> FET

<10> Artificial Sequence

<20>

<23> Description of Artificial Sequence: Synthetic

<40> 15

Arg Gly Leu Thr Gly Ser Gly Val Lys Val Ala Val Leu Asp Thr
1 5 10 15

<10> 16

<10> 16

<10> FET

<10> Artificial Sequence

<20>

<23> Description of Artificial Sequence: Synthetic

<40> 16

Thr Gly Ser Gly Val Lys Val Ala Val Leu Asp Thr Gly Ile Ser
1 5 10 15

<10> 17

<10> 15

<10> FET

<10> Artificial Sequence

<20>

<23> Description of Artificial Sequence: Synthetic

<40> 17

Gly Val Lys Val Ala Val Leu Asp Thr Gly Ile Ser Thr His Pro
1 5 10 15

<10> 18

<10> 16

<10> FET

<10> Artificial Sequence

<20>

<23> Description of Artificial Sequence: Synthetic

<40> 18

Val Ala Val Leu Asp Thr Gly Ile Ser Thr His Pro Asp Leu Asn
1 5 10 15

<210> 19

Q2118 15
Q2120 PPT
Q2130 Artificial Sequence

Q2200
Q2210 Description of Artificial Sequence: Synthetic

Q3000 19
Leu Asp Thr Gly Ile Ser Thr His Pro Asp Leu Asn Ile Arg Gly
1 5 10 15

Q3100 16
Q3110 11
Q3120 PPT
Q3130 Artificial Sequence

Q3200
Q3210 Description of Artificial Sequence: Synthetic

Q4000 20
Gly Ile Ser Thr His Pro Asp Leu Asn Ile Arg Gly Gly Ala Ser
1 5 10 15

Q4100 21
Q4110 15
Q4120 PPT
Q4130 Artificial Sequence

Q4200
Q4210 Description of Artificial Sequence: Synthetic

Q4300 21
Thr His Pro Asp Leu Asn Ile Arg Gly Gly Ala Ser Phe Val Pro
1 5 10 15

Q4400 21
Q4410 15
Q4420 PPT
Q4430 Artificial Sequence

Q4500
Q4510 Description of Artificial Sequence: Synthetic

Q4600 22
Asp Leu Asn Ile Arg Gly Gly Ala Ser Phe Val Pro Gly Glu Pro
1 5 10 15

Q4700 23
Q4710 19
Q4720 PPT
Q4730 Artificial Sequence

Q4800
Q4810 Description of Artificial Sequence: Synthetic

Q4900 23

Ile Arg Gly Gly Ala Ser Phe Val Pro Gly Glu Pro Ser Thr Gln
 1 5 10 15

<110> 14
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 <112> PFT
 <113> Artificial Sequence

<210>
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<400> 14
 Gly Ala Ser Phe Val Pro Gly Glu Pro Ser Thr Gln Asp Gly Asn
 1 5 10 15

<110> 15
 <111> 15
 <112> PFT
 <113> Artificial Sequence

<210>
 <213> Description of Artificial Sequence: Synthetic

<400> 15
 Phe Val Pro Gly Glu Pro Ser Thr Gln Asp Gly Asn Gly His Gly
 1 5 10 15

<110> 16
 <111> 15
 <112> PFT
 <113> Artificial Sequence

<210>
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<400> 16
 Gly Glu Pro Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val
 1 5 10 15

<110> 17
 <111> 15
 <112> PFT
 <113> Artificial Sequence

<210>
 <213> Description of Artificial Sequence: Synthetic

<400> 17
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 1 5 10 15

<110> 18
 <111> 15
 <112> PFT
 <213> Artificial Sequence

Q1208

Q1208 Description of Artificial Sequence: Synthetic

Q1208 13

Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile Ala Ala
1 5 10 15

Q1208 13

Q1208 15

Q1208 PPT

Q1208 Artificial Sequence

Q1209

Q1209 Description of Artificial Sequence: Synthetic

Q1209 13

Gly His Gly Thr His Val Ala Gly Thr Ile Ala Ala Leu Asn Asn
1 5 10 15

Q1209 30

Q1209 15

Q1209 PPT

Q1209 Artificial Sequence

Q1209

Q1209 Description of Artificial Sequence: Synthetic

Q1209 30

Thr His Val Ala Gly Thr Ile Ala Ala Leu Asn Asn Ser Ile Gly
1 5 10 15

Q1209 31

Q1209 15

Q1209 PPT

Q1209 Artificial Sequence

Q1209

Q1209 Description of Artificial Sequence: Synthetic

Q1209 31

Ala Gly Thr Ile Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly
1 5 10 15

Q1209 32

Q1209 15

Q1209 PPT

Q1209 Artificial Sequence

Q1210

Q1210 Description of Artificial Sequence: Synthetic

Q1210 32

Ile Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly Val Ala Pro
1 5 10 15

Q1100 33
Q1110 15
Q1120 FFT
Q1130 Artificial Sequence

Q1200
Q1230 Description of Artificial Sequence: Synthetic

Q4000 35
Leu Asn Asn Ser Ile Gly Val Leu Gly Val Ala Pro Ser Ala Glu
1 5 10 15

Q1100 34
Q1110 15
Q1120 FFT
Q1130 Artificial Sequence

Q1200
Q1230 Description of Artificial Sequence: Synthetic

Q4000 34
Ser Ile Gly Val Leu Gly Val Ala Pro Ser Ala Glu Leu Tyr Ala
1 5 10 15

Q1100 35
Q1110 15
Q1120 FFT
Q1130 Artificial Sequence

Q1200
Q1230 Description of Artificial Sequence: Synthetic

Q4000 35
Val Leu Gly Val Ala Pro Ser Ala Glu Leu Tyr Ala Val Lys Val
1 5 10 15

Q1100 36
Q1110 15
Q1120 FFT
Q1130 Artificial Sequence

Q1200
Q1230 Description of Artificial Sequence: Synthetic

Q4000 36
Val Ala Pro Ser Ala Glu Leu Tyr Ala Val Lys Val Leu Gly Ala
1 5 10 15

Q1100 37
Q1110 15
Q1120 FFT
Q1130 Artificial Sequence

Q1200
Q1230 Description of Artificial Sequence: Synthetic

4400- 37
 Ser Ala Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Ser
 1 5 10 15

4210- 38
 4211- 15
 4212- PBT
 4213- Artificial Sequence

4220-
 4221- Description of Artificial Sequence: Synthetic

4400- 38
 Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Ser Gly Ser Val
 1 5 10 15

4210- 39
 4211- 15
 4212- PBT
 4213- Artificial Sequence

4220-
 4221- Description of Artificial Sequence: Synthetic

4400- 39
 Val Lys Val Leu Gly Ala Ser Gly Ser Gly Ser Val Ser Ser Ile
 1 5 10 15

4210- 40
 4211- 15
 4212- PBT
 4213- Artificial Sequence

4220-
 4221- Description of Artificial Sequence: Synthetic

4400- 40
 Leu Gly Ala Ser Gly Ser Gly Ser Val Ser Ser Ile Ala Gln Gly
 1 5 10 15

4210- 41
 4211- 15
 4212- PBT
 4213- Artificial Sequence

4220-
 4221- Description of Artificial Sequence: Synthetic

4400- 41
 Ser Gly Ser Gly Ser Val Ser Ser Ile Ala Gln Gly Leu Glu Trp
 1 5 10 15

4210- 42
 4211- 15

Q212> PPT
Q212> Artificial Sequence

Q212>
Q212> Description of Artificial Sequence: Synthetic

Q400> 42
Gly Ser Val Ser Ser Ile Ala Gln Gly Leu Glu Trp Ala Gly Asn
1 5 10 15

Q213> 43
Q213> 15
Q213> PPT
Q213> Artificial Sequence

Q213>
Q213> Description of Artificial Sequence: Synthetic

Q401> 43
Ser Ser Ile Ala Gln Gly Leu Glu Trp Ala Gly Asn Asn Gly Met
1 5 10 15

Q214> 44
Q214> 15
Q214> PPT
Q214> Artificial Sequence

Q214>
Q214> Description of Artificial Sequence: Synthetic

Q402> 44
Ala Gln Gly Leu Glu Trp Ala Gly Asn Asn Gly Met His Val Ala
1 5 10 15

Q215> 45
Q215> 15
Q215> PPT
Q215> Artificial Sequence

Q215>
Q215> Description of Artificial Sequence: Synthetic

Q403> 45
Leu Glu Trp Ala Gly Asn Asn Gly Met His Val Ala Asn Leu Ser
1 5 10 15

Q216> 46
Q216> 15
Q216> PPT
Q216> Artificial Sequence

Q216>
Q216> Description of Artificial Sequence: Synthetic

Q404> 46
Ala Gly Asn Asn Gly Met His Val Ala Asn Leu Ser Leu Gly Ser

1	5	10	15
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<210> 47
 <211> 15
 <212> PPT
 <213> Artificial Sequence

<214>
 <215> Description of Artificial Sequence: Synthetic

<400> 47
 Asn Gly Met His Val Ala Asn Leu Ser Leu Gly Ser Pro Ser Pro
 1 5 10 15

<210> 48
 <211> 15
 <212> PPT
 <213> Artificial Sequence

<214>
 <215> Description of Artificial Sequence: Synthetic

<400> 48
 His Val Ala Asn Leu Ser Leu Gly Ser Pro Ser Pro Ser Ala Thr
 1 5 10 15

<210> 49
 <211> 15
 <212> PPT
 <213> Artificial Sequence

<214>
 <215> Description of Artificial Sequence: Synthetic

<400> 49
 Asn Leu Ser Leu Gly Ser Pro Ser Pro Ser Ala Thr Leu Glu Gln
 1 5 10 15

<210> 50
 <211> 15
 <212> PPT
 <213> Artificial Sequence

<214>
 <215> Description of Artificial Sequence: Synthetic

<400> 50
 Leu Gly Ser Pro Ser Pro Ser Ala Thr Leu Glu Gln Ala Val Asn
 1 5 10 15

<210> 51
 <211> 15
 <212> PPT
 <213> Artificial Sequence

<120>

<13> Description of Artificial Sequence: Synthetic

<400> 51

Pro Ser Pro Ser Ala Thr Leu Glu Gln Ala Val Asn Ser Ala Thr
1 5 10 15

<100> 52

<110> 15

<120> PRT

<13> Artificial Sequence

<120>

<13> Description of Artificial Sequence: Synthetic

<400> 53

Ser Ala Thr Leu Glu Gln Ala Val Asn Ser Ala Thr Ser Arg Gly
1 5 10 15

<100> 53

<110> 15

<120> PRT

<13> Artificial Sequence

<120>

<13> Description of Artificial Sequence: Synthetic

<400> 53

Leu Glu Gln Ala Val Asn Ser Ala Thr Ser Arg Gly Val Leu Val
1 5 10 15

<100> 54

<110> 15

<120> PRT

<13> Artificial Sequence

<120>

<13> Description of Artificial Sequence: Synthetic

<400> 54

Ala Val Asn Ser Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala
1 5 10 15

<100> 55

<110> 15

<120> PRT

<13> Artificial Sequence

<120>

<13> Description of Artificial Sequence: Synthetic

<400> 55

Ser Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala Ser Gly Asn
1 5 10 15

Q2118 56
Q2119 15
Q2120 PFT
Q2121 Artificial Sequence

Q2122
Q2123 Description of Artificial Sequence: Synthetic

Q4000 56
Ser Arg Gly Val Leu Val Val Ala Ala Ser Gly Asn Ser Gly Ala
1 5 10 15

Q2124 57
Q2125 15
Q2126 PFT
Q2127 Artificial Sequence

Q2128
Q2129 Description of Artificial Sequence: Synthetic

Q4000 57
Val Leu Val Val Ala Ala Ser Gly Asn Ser Gly Ala Gly Ser Ile
1 5 10 15

Q2130 58
Q2131 15
Q2132 PFT
Q2133 Artificial Sequence

Q2134
Q2135 Description of Artificial Sequence: Synthetic

Q4000 58
Val Ala Ala Ser Gly Asn Ser Gly Ala Gly Ser Ile Ser Tyr Pro
1 5 10 15

Q2136 59
Q2137 15
Q2138 PFT
Q2139 Artificial Sequence

Q2140
Q2141 Description of Artificial Sequence: Synthetic

Q4000 59
Ser Gly Asn Ser Gly Ala Gly Ser Ile Ser Tyr Pro Ala Arg Tyr
1 5 10 15

Q2142 60
Q2143 15
Q2144 PFT
Q2145 Artificial Sequence

Q2146
Q2147 Description of Artificial Sequence: Synthetic

<400> 60
 Ser Gly Ala Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala
 1 5 10 15

<400> 61
 <410> 15
 <410> PPT
 <410> Artificial Sequence

<400>
 <420> Description of Artificial Sequence: Synthetic

<400> 61
 Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val
 1 5 10 15

<400> 62
 <410> 15
 <410> PPT
 <410> Artificial Sequence

<400>
 <420> Description of Artificial Sequence: Synthetic

<400> 63
 Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val Gly Ala Thr
 1 5 10 15

<400> 64
 <410> 15
 <410> PPT
 <410> Artificial Sequence

<400>
 <420> Description of Artificial Sequence: Synthetic

<400> 64
 Ala Arg Tyr Ala Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn
 1 5 10 15

<400> 64
 <410> 15
 <410> PPT
 <410> Artificial Sequence

<400>
 <420> Description of Artificial Sequence: Synthetic

<400> 64
 Ala Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg
 1 5 10 15

<400> 65
 <410> 15
 <410> PPT

4213: Artificial Sequence

4213:

423: Description of Artificial Sequence: Synthetic

4401: 65

Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser Phe
1 10 15

4210: 66

4211: 15

4212: FFT

4213: Artificial Sequence

4213:

423: Description of Artificial Sequence: Synthetic

4402: 66

Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser Phe Ser Gln Tyr
1 5 10 15

4210: 67

4211: 15

4212: FFT

4213: Artificial Sequence

4213:

423: Description of Artificial Sequence: Synthetic

4403: 67

Asp Gln Asn Asn Asn Arg Ala Ser Phe Ser Gln Tyr Gly Ala Gly
1 5 10 15

4210: 68

4211: 15

4212: FFT

4213: Artificial Sequence

4213:

423: Description of Artificial Sequence: Synthetic

4404: 68

Asn Asn Arg Ala Ser Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile
1 5 10 15

4210: 69

4211: 15

4212: FFT

4213: Artificial Sequence

4213:

423: Description of Artificial Sequence: Synthetic

4405: 69

Ala Ser Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro
1 5 10 15

4210- 70
4211- 15
4212- PBT
4213- Artificial Sequence

4220-
4223- Description of Artificial Sequence: Synthetic

4400- 70
Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Asn
1 5 10 15

4211- 71
4212- 15
4213- PBT
4214- Artificial Sequence

4220-
4223- Description of Artificial Sequence: Synthetic

4400- 71
Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Asn Val Gln Ser
1 5 10 15

4211- 72
4212- 15
4213- PBT
4214- Artificial Sequence

4220-
4223- Description of Artificial Sequence: Synthetic

4400- 72
Leu Asp Ile Val Ala Pro Gly Val Asn Val Gln Ser Thr Tyr Pro
1 5 10 15

4211- 73
4212- 15
4213- PBT
4214- Artificial Sequence

4220-
4223- Description of Artificial Sequence: Synthetic

4400- 73
Val Ala Pro Gly Val Asn Val Gln Ser Thr Tyr Pro Gly Ser Thr
1 5 10 15

4211- 74
4212- 15
4213- PBT
4214- Artificial Sequence

4220-

Q223: Description of Artificial Sequence: Synthetic

Q223: 74
Gly Val Asn Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser
1 5 10 15

Q223: 75
Q223: 15
Q223: PPT
Q223: Artificial Sequence

Q224: Description of Artificial Sequence: Synthetic

Q224: 75
Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Leu Asn Gly
1 5 10 15

Q224: 76
Q224: 15
Q224: PPT
Q224: Artificial Sequence

Q225: Description of Artificial Sequence: Synthetic

Q225: 76
Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Leu Asn Gly Thr Ser Met
1 5 10 15

Q225: 77
Q225: 15
Q225: PPT
Q225: Artificial Sequence

Q226: Description of Artificial Sequence: Synthetic

Q226: 77
Gly Ser Thr Tyr Ala Ser Leu Asn Gly Thr Ser Met Ala Thr Pro
1 5 10 15

Q226: 78
Q226: 15
Q226: PPT
Q226: Artificial Sequence

Q227: Description of Artificial Sequence: Synthetic

Q227: 78
Tyr Ala Ser Leu Asn Gly Thr Ser Met Ala Thr Pro His Val Ala
1 5 10 15

Q210: 79

Q211: 15
Q212: PPT
Q213: Artificial Sequence

Q214:
Q215: Description of Artificial Sequence: Synthetic

Q400: 79
Leu Asn Gly Thr Ser Met Ala Thr Pro His Val Ala Gly Ala Ala
1 5 10 15

Q210: 80
Q211: 15
Q212: PPT
Q213: Artificial Sequence

Q214:
Q215: Description of Artificial Sequence: Synthetic

Q400: 80
Thr Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu Val
1 5 10 15

Q210: 81
Q211: 15
Q212: PPT
Q213: Artificial Sequence

Q214:
Q215: Description of Artificial Sequence: Synthetic

Q400: 81
Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu Val Lys Gln Lys
1 5 10 15

Q210: 82
Q211: 15
Q212: PPT
Q213: Artificial Sequence

Q214:
Q215: Description of Artificial Sequence: Synthetic

Q400: 82
Gly Val Ala Gly Ala Ala Ala Leu Val Lys Gln Lys Asn Pro Ser
1 5 10 15

Q210: 83
Q211: 15
Q212: PPT
Q213: Artificial Sequence

Q214:
Q215: Description of Artificial Sequence: Synthetic

Q400: 83

Gly Ala Ala Ala Leu Val Lys Gln Lys Asn Pro Ser Trp Ser Asn
 1 5 10 15

42101 84
 42111 15
 42121 PPT
 42131 Artificial Sequence

42141
 42151 Description of Artificial Sequence: Synthetic

44101 84
 Ala Leu Val Lys Gln Lys Asn Pro Ser Trp Ser Asn Val Gln Ile
 1 5 10 15

44111 85
 44121 15
 44131 PPT
 44141 Artificial Sequence

44151
 44161 Description of Artificial Sequence: Synthetic

44171 85
 Lys Gln Lys Asn Pro Ser Trp Ser Val Asn Gln Ile Arg Asn His
 1 5 10 15

44181 86
 44191 15
 44201 PPT
 44211 Artificial Sequence

44221
 44231 Description of Artificial Sequence: Synthetic

44241 86
 Asn Pro Ser Trp Ser Asn Val Gln Ile Arg Asn His Leu Lys Asn
 1 5 10 15

44251 87
 44261 15
 44271 PPT
 44281 Artificial Sequence

44291
 44301 Description of Artificial Sequence: Synthetic

44311 87
 Trp Ser Asn Val Gln Ile Arg Asn His Leu Lys Asn Thr Ala Thr
 1 5 10 15

44321 88
 44331 15
 44341 PPT
 44351 Artificial Sequence

<210>

<210> Description of Artificial Sequence: Synthetic

<210> 83

Val Gln Ile Arg Asn His Leu Lys Asn Thr Ala Thr Ser Leu Gly
1 5 10 15

<210> 83

<210> 15

<210> PPT

<210> Artificial Sequence

<210>

<210> Description of Artificial Sequence: Synthetic

<210> 83

Arg Asn His Leu Lys Asn Thr Ala Thr Ser Leu Gly Ser Thr Asn
1 5 10 15

<210> 90

<210> 15

<210> PPT

<210> Artificial Sequence

<210>

<210> Description of Artificial Sequence: Synthetic

<210> 90

Leu Lys Asn Thr Ala Thr Ser Leu Gly Ser Thr Asn Leu Tyr Gly
1 5 10 15

<210> 91

<210> 15

<210> PPT

<210> Artificial Sequence

<210>

<210> Description of Artificial Sequence: Synthetic

<210> 91

Thr Ala Thr Ser Leu Gly Ser Thr Asn Leu Tyr Gly Ser Gly Leu
1 5 10 15

<210> 91

<210> 15

<210> PPT

<210> Artificial Sequence

<210>

<210> Description of Artificial Sequence: Synthetic

<210> 92

Ser Leu Gly Ser Thr Asn Leu Tyr Gly Ser Gly Leu Val Asn Ala
1 5 10 15

42100-93
42110-15
42120-PET
42130-Artificial Sequence

42100-
42130-Description of Artificial Sequence: Synthetic

42100-93
Ser Thr Asn Leu Tyr Gly Ser Gly Leu Val Asn Ala Glu Ala Ala
1 5 10 15

42100-94
42110-15
42120-PET
42130-Artificial Sequence

42100-
42130-Description of Artificial Sequence: Synthetic

42100-94
Asn Leu Tyr Gly Ser Gly Leu Val Asn Ala Glu Ala Ala Thr Arg
1 5 10 15

42100-95
42110-15
42120-PET
42130-Artificial Sequence

42100-
42130-Description of Artificial Sequence: Synthetic

42100-95
Asp Ala Glu Leu His Ile Phe Arg Val Phe Thr Asn Asn Gln Val
1 5 10 15

42100-96
42110-15
42120-PET
42130-Artificial Sequence

42100-
42130-Description of Artificial Sequence: Synthetic

42100-96
Pro Leu Arg Arg Ala Ser Leu Ser Leu Gly Ser Gly Phe Trp His
1 5 10 15

42100-97
42110-15
42120-PET
42130-Artificial Sequence

42200-
42230-Description of Artificial Sequence: Synthetic

<400> 97
 Arg Ala Ser Leu Ser Leu Gly Ser Gly Phe Trp His Ala Thr Gly
 1 5 10 15

<210> 98
 <211> 15
 <212> PFT
 <213> Artificial Sequence

<214>
 <215> Description of Artificial Sequence: Synthetic

<400> 98
 Leu Ser Leu Gly Ser Gly Phe Trp His Ala Thr Gly Arg His Ser
 1 5 10 15

<210> 99
 <211> 15
 <212> PFT
 <213> Artificial Sequence

<214>
 <215> Description of Artificial Sequence: Synthetic

<400> 99
 Gly Ser Gly Phe Trp His Ala Thr Gly Arg His Ser Ser Arg Arg
 1 5 10 15

<210> 100
 <211> 15
 <212> PFT
 <213> Artificial Sequence

<214>
 <215> Description of Artificial Sequence: Synthetic

<400> 100
 Phe Trp His Ala Thr Gly Arg His Ser Ser Arg Arg Leu Leu Arg
 1 5 10 15

<210> 101
 <211> 15
 <212> PFT
 <213> Artificial Sequence

<214>
 <215> Description of Artificial Sequence: Synthetic

<400> 101
 Ala Thr Gly Arg His Ser Ser Arg Arg Leu Leu Arg Ala Ile Pro
 1 5 10 15

<210> 102
 <211> 15

02128 PPT
02128 Artificial Sequence

02128
02128 Description of Artificial Sequence: Synthetic

02128-102
Arg His Ser Ser Arg Arg Leu Leu Arg Ala Ile Pro Arg Gln Val
1 5 10 15

02128-102
02128-15
02128 PPT
02128 Artificial Sequence

02128
02128 Description of Artificial Sequence: Synthetic

02128-103
Ser Arg Arg Leu Leu Arg Ala Ile Pro Arg Gln Val Ala Gln Thr
1 5 10 15

02128-104
02128-15
02128 PPT
02128 Artificial Sequence

02128
02128 Description of Artificial Sequence: Synthetic

02128-104
Leu Leu Arg Ala Ile Pro Arg Gln Val Ala Gln Thr Leu Gln Ala
1 5 10 15

02128-105
02128-15
02128 PPT
02128 Artificial Sequence

02128
02128 Description of Artificial Sequence: Synthetic

02128-105
Ala Ile Pro Arg Gln Val Ala Gln Thr Leu Gln Ala Asp Val Leu
1 5 10 15

02128-106
02128-15
02128 PPT
02128 Artificial Sequence

02128
02128 Description of Artificial Sequence: Synthetic

02128-106
Arg Gln Val Ala Gln Thr Leu Gln Ala Asp Val Leu Trp Gln Met

1	5	10	15
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<210> 107
 <211> 15
 <212> PFT
 <213> Artificial Sequence

 <220>
 <221> Description of Artificial Sequence: Synthetic

 <400> 107
 Ala Gln Thr Leu Gln Ala Asp Val Leu Trp Gln Met Gly Tyr Thr
 1 5 10 15

<210> 108
 <211> 15
 <212> PFT
 <213> Artificial Sequence

 <220>
 <221> Description of Artificial Sequence: Synthetic

 <400> 108
 Met Gln Ala Asp Val Leu Trp Gln Met Gly Tyr Thr Gly Ala Asn
 1 5 10 15

<210> 109
 <211> 15
 <212> PFT
 <213> Artificial Sequence

 <220>
 <221> Description of Artificial Sequence: Synthetic

 <400> 109
 Asp Val Leu Trp Gln Met Gly Tyr Thr Gly Ala Asn Val Arg Val
 1 5 10 15

<210> 110
 <211> 15
 <212> PFT
 <213> Artificial Sequence

 <220>
 <221> Description of Artificial Sequence: Synthetic

 <400> 110
 Trp Gln Met Gly Tyr Thr Gly Ala Asn Val Arg Val Ala Val Phe
 1 5 10 15

<210> 111
 <211> 15
 <212> PFT
 <213> Artificial Sequence

<228>
<228> Description of Artificial Sequence: Synthetic

<40> 111
Gly Tyr Thr Gly Ala Asn Val Arg Val Ala Val Phe Asp Thr Gly
1 5 10 15

<210> 112
<211> 15
<212> PRT
<213> Artificial Sequence

<229>
<229> Description of Artificial Sequence: Synthetic

<40> 112
Gly Ala Asn Val Arg Val Ala Val Phe Asp Thr Gly Leu Ser Glu
1 5 10 15

<210> 113
<211> 15
<212> PRT
<213> Artificial Sequence

<230>
<230> Description of Artificial Sequence: Synthetic

<40> 113
Val Arg Val Ala Val Phe Asp Thr Gly Leu Ser Glu Lys His Pro
1 5 10 15

<210> 114
<211> 15
<212> PRT
<213> Artificial Sequence

<231>
<231> Description of Artificial Sequence: Synthetic

<40> 114
Ala Val Phe Asp Thr Gly Leu Ser Glu Lys His Pro His Phe Lys
1 5 10 15

<210> 115
<211> 15
<212> PRT
<213> Artificial Sequence

<232>
<232> Description of Artificial Sequence: Synthetic

<40> 115
Asp Thr Gly Leu Ser Glu Lys His Pro His Phe Lys Asn Val Lys
1 5 10 15

<210> 116
<211> 15
<212> PRT
<213> Artificial Sequence

<214>
<215> Description of Artificial Sequence: Synthetic

<400> 116
Leu Ser Glu Lys His Pro His Phe Lys Asn Val Lys Glu Arg Thr
1 5 10 15

<210> 117
<211> 15
<212> PRT
<213> Artificial Sequence

<214>
<215> Description of Artificial Sequence: Synthetic

<400> 117
Lys His Pro His Phe Lys Asn Val Lys Glu Arg Thr Asn Trp Thr
1 5 10 15

<210> 118
<211> 15
<212> PRT
<213> Artificial Sequence

<214>
<215> Description of Artificial Sequence: Synthetic

<400> 118
His Phe Lys Asn Val Lys Glu Arg Thr Asn Trp Thr Asn Glu Arg
1 5 10 15

<210> 119
<211> 15
<212> PRT
<213> Artificial Sequence

<214>
<215> Description of Artificial Sequence: Synthetic

<400> 119
Asn Val Lys Glu Arg Thr Asn Trp Thr Asn Glu Arg Thr Leu Asp
1 5 10 15

<210> 120
<211> 15
<212> PRT
<213> Artificial Sequence

<214>
<215> Description of Artificial Sequence: Synthetic

0400 120
 Glu Arg Thr Asn Trp Thr Asn Glu Arg Thr Leu Asp Asp Gly Leu
 1 5 10 15

0210 121
 0211 15
 0212 PPT
 0213 Artificial Sequence

0220
 0223 Description of Artificial Sequence: Synthetic

0400 121
 Asn Trp Thr Asn Glu Arg Thr Leu Asp Asp Gly Leu Gly His Gly
 1 5 10 15

0210 122
 0211 15
 0212 PPT
 0213 Artificial Sequence

0220
 0223 Description of Artificial Sequence: Synthetic

0400 122
 Asn Glu Arg Thr Leu Asp Asp Gly Leu Gly His Gly Thr Phe Val
 1 5 10 15

0210 123
 0211 15
 0212 PPT
 0213 Artificial Sequence

0220
 0223 Description of Artificial Sequence: Synthetic

0400 123
 Thr Leu Asp Asp Gly Leu Gly His Gly Thr Phe Val Ala Gly Val
 1 5 10 15

0210 124
 0211 15
 0212 PPT
 0213 Artificial Sequence

0220
 0223 Description of Artificial Sequence: Synthetic

0400 124
 Asp Gly Leu Gly His Gly Thr Phe Val Ala Gly Val Ile Ala Ser
 1 5 10 15

0210 125
 0211 15
 0212 PPT

<213> Artificial Sequence

<210>

<213> Description of Artificial Sequence: Synthetic

<400> 125

Gly His Gly Thr Phe Val Ala Gly Val Ile Ala Ser Met Arg Glu
1 5 10 15

<210> 126

<211> 15

<212> PPT

<213> Artificial Sequence

<210>

<213> Description of Artificial Sequence: Synthetic

<400> 126

Thr Phe Val Ala Gly Val Ile Ala Ser Met Arg Glu Cys Gln Gly
1 5 10 15

<210> 127

<211> 15

<212> PPT

<213> Artificial Sequence

<210>

<213> Description of Artificial Sequence: Synthetic

<400> 127

Ala Gly Val Ile Ala Ser Met Arg Glu Cys Gln Gly Phe Ala Pro
1 5 10 15

<210> 128

<211> 15

<212> PPT

<213> Artificial Sequence

<210>

<213> Description of Artificial Sequence: Synthetic

<400> 128

Ile Ala Ser Met Arg Glu Cys Gln Gly Phe Ala Pro Asp Ala Glu
1 5 10 15

<210> 129

<211> 15

<212> PPT

<213> Artificial Sequence

<210>

<213> Description of Artificial Sequence: Synthetic

<400> 129

Met Arg Glu Cys Gln Gly Phe Ala Pro Asp Ala Glu Leu His Ile
1 5 10 15

<210> 120

<211> 15

<212> PPT

<213> Artificial Sequence

<220>

<221> Description of Artificial Sequence: Synthetic

<400> 130

Cys Gln Gly Phe Ala Pro Asp Ala Glu Leu His Ile Phe Arg Val
1 5 10 15

<210> 131

<211> 15

<212> PPT

<213> Artificial Sequence

<220>

<221> Description of Artificial Sequence: Synthetic

<400> 131

Phe Ala Pro Asp Ala Glu Leu His Ile Phe Arg Val Phe Thr Asn
1 5 10 15

<210> 132

<211> 15

<212> PPT

<213> Artificial Sequence

<220>

<221> Description of Artificial Sequence: Synthetic

<400> 132

Asp Ala Glu Leu His Ile Phe Arg Val Phe Thr Asn Asn Gln Val
1 5 10 15

<210> 133

<211> 15

<212> PPT

<213> Artificial Sequence

<220>

<221> Description of Artificial Sequence: Synthetic

<400> 133

Leu His Ile Phe Arg Val Phe Thr Asn Asn Gln Val Ser Tyr Thr
1 5 10 15

<210> 134

<211> 15

<212> PPT

<213> Artificial Sequence

<220>

Q2130 Description of Artificial Sequence: Synthetic

Q400 134

Phe Arg Val Phe Thr Asn Asn Gln Val Ser Tyr Thr Ser Trp Phe
1 5 10 15

Q2100 135

Q2110 15

Q2120 PPT

Q2130 Artificial Sequence

Q2200

Q2230 Description of Artificial Sequence: Synthetic

Q400 135

Thr Thr Asn Asn Gln Val Ser Tyr Thr Ser Trp Phe Leu Asp Ala
1 5 10 15

Q2100 136

Q2110 15

Q2120 PPT

Q2130 Artificial Sequence

Q2300

Q2330 Description of Artificial Sequence: Synthetic

Q400 136

Asn Gln Val Ser Tyr Thr Ser Trp Phe Leu Asp Ala Phe Asn Tyr
1 5 10 15

Q2100 137

Q2110 15

Q2120 PPT

Q2130 Artificial Sequence

Q2200

Q2230 Description of Artificial Sequence: Synthetic

Q400 137

Ser Tyr Thr Ser Trp Phe Leu Asp Ala Phe Asn Tyr Ala Ile Leu
1 5 10 15

Q2100 138

Q2110 15

Q2120 PPT

Q2130 Artificial Sequence

Q2400

Q2430 Description of Artificial Sequence: Synthetic

Q400 138

Ser Trp Phe Leu Asp Ala Phe Asn Tyr Ala Ile Leu Lys Lys Ile
1 5 10 15

Q2100 139

Q111> 15
Q112> PPT
Q113> Artificial Sequence

Q114>
Q115> Description of Artificial Sequence: Synthetic

Q400> 139
Leu Asp Ala Phe Asn Tyr Ala Ile Leu Lys Lys Ile Asp Val Leu
1 5 10 15

Q116> 140
Q117> 15
Q118> PPT
Q119> Artificial Sequence

Q120>
Q121> Description of Artificial Sequence: Synthetic

Q400> 140
Phe Asn Tyr Ala Ile Leu Lys Lys Ile Asp Val Leu Asn Leu Ser
1 5 10 15

Q122> 141
Q123> 15
Q124> PPT
Q125> Artificial Sequence

Q126>
Q127> Description of Artificial Sequence: Synthetic

Q400> 141
Ala Ile Leu Lys Lys Ile Asp Val Leu Asn Leu Ser Ile Gly Gly
1 5 10 15

Q128> 142
Q129> 15
Q130> PPT
Q131> Artificial Sequence

Q132>
Q133> Description of Artificial Sequence: Synthetic

Q400> 142
Lys Lys Ile Asp Val Leu Asn Leu Ser Ile Gly Gly Pro Asp Phe
1 5 10 15

Q134> 143
Q135> 15
Q136> PPT
Q137> Artificial Sequence

Q138>
Q139> Description of Artificial Sequence: Synthetic

Q400> 143

Asp Val Leu Asn Leu Ser Ile Gly Gly Pro Asp Phe Met Asp His
 1 5 10 15

<210> 144
 <211> 15
 <212> PFT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 144
 Asn Leu Ser Ile Gly Gly Pro Asp Phe Met Asp His Pro Phe Val
 1 5 10 15

<210> 145
 <211> 11
 <212> PFT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 145
 Ile Gly Gly Pro Asp Phe Met Asp His Pro Phe Val Asp Lys Val
 1 5 10 15

<210> 146
 <211> 15
 <212> PFT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 146
 Pro Asp Phe Met Asp His Pro Phe Val Asp Lys Val Trp Glu Leu
 1 5 10 15

<210> 147
 <211> 15
 <212> PFT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 147
 Met Asp His Pro Phe Val Asp Lys Val Trp Glu Leu Thr Ala Asn
 1 5 10 15

<210> 148
 <211> 15
 <212> PFT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<210> 148

Pro Phe Val Asp Lys Val Trp Glu Leu Thr Ala Asn Asn Val Ile
1 10 15

<210> 149

<211> 15

<212> PPT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<210> 149

Asp Lys Val Trp Glu Leu Thr Ala Asn Asn Val Ile Met Val Ser
1 10 15

<210> 150

<211> 15

<212> PPT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<210> 150

Trp Glu Leu Thr Ala Asn Asn Val Ile Met Val Ser Ala Ile Gly
1 10 15

<210> 151

<211> 15

<212> PPT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<210> 151

Thr Ala Asn Asn Val Ile Met Val Ser Ala Ile Gly Asn Asp Gly
1 5 10 15

<210> 152

<211> 15

<212> PPT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<210> 152

Asn Val Ile Met Val Ser Ala Ile Gly Asn Asp Gly Pro Leu Tyr
1 5 10 15

Q110- 153
Q111- 15
Q112- PBT
Q113- Artificial Sequence

Q110-
Q113- Description of Artificial Sequence: Synthetic

Q110- 153
Met Val Ser Ala Ile Gly Asn Asp Gly Pro Leu Tyr Gly Thr Ile
1 5 10 15

Q110- 154
Q111- 15
Q112- PBT
Q113- Artificial Sequence

Q110-
Q113- Description of Artificial Sequence: Synthetic

Q110- 154
Ala Ile Gly Asn Asp Gly Pro Leu Tyr Gly Thr Leu Asn Asn Pro
1 5 10 15

Q110- 155
Q111- 15
Q112- PBT
Q113- Artificial Sequence

Q110-
Q113- Description of Artificial Sequence: Synthetic

Q110- 155
Asn Asp Gly Pro Leu Tyr Gly Thr Leu Asn Asn Pro Ala Asp Gln
1 5 10 15

Q110- 156
Q111- 15
Q112- PBT
Q113- Artificial Sequence

Q110-
Q113- Description of Artificial Sequence: Synthetic

Q110- 156
Pro Leu Tyr Gly Thr Leu Asn Asn Pro Ala Asp Gln Met Asp Val
1 5 10 15

Q110- 157
Q111- 15
Q112- PBT
Q113- Artificial Sequence

Q110-
Q113- Description of Artificial Sequence: Synthetic

<400> 157
 Gly Thr Leu Asn Asn Pro Ala Asp Gln Met Asp Val Ile Gly Val
 5 10 15

<410> 158
 <411> 15
 <412> PRT
 <413> Artificial Sequence

<420>
 <421> Description of Artificial Sequence: Synthetic

<400> 158
 Asn Asn Pro Ala Asp Gln Met Asp Val Ile Gly Val Gly Gly Ile
 5 10 15

<410> 159
 <411> 15
 <412> PRT
 <413> Artificial Sequence

<420>
 <421> Description of Artificial Sequence: Synthetic

<400> 159
 Ala Asp Gln Met Asp Val Ile Gly Val Gly Gly Ile Asp Phe Glu
 5 10 15

<410> 160
 <411> 15
 <412> PRT
 <413> Artificial Sequence

<420>
 <421> Description of Artificial Sequence: Synthetic

<400> 160
 Met Asp Val Ile Gly Val Gly Gly Ile Asp Phe Glu Asp Asn Ile
 5 10 15

<410> 161
 <411> 15
 <412> PRT
 <413> Artificial Sequence

<420>
 <421> Description of Artificial Sequence: Synthetic

<400> 161
 Ile Gly Val Gly Gly Ile Asp Phe Glu Asp Asn Ile Ala Arg Phe
 1 5 10 15

<410> 162
 <411> 15

02110 PPT
02110 Artificial Sequence

02120
02200 Description of Artificial Sequence: Synthetic

04000 162
Gly Gly Ile Asp Phe Glu Asp Asn Ile Ala Arg Phe Ser Ser Arg
1 5 10 15

02110 163
02110 15
02110 PPT
02110 Artificial Sequence

02120
02200 Description of Artificial Sequence: Synthetic

04000 163
Asp Phe Glu Asp Asn Ile Ala Arg Phe Ser Ser Arg Gly Met Thr
1 5 10 15

02110 164
02110 15
02110 PPT
02110 Artificial Sequence

02120
02200 Description of Artificial Sequence: Synthetic

04000 164
Asp Asn Ile Ala Arg Phe Ser Ser Arg Gly Met Thr Thr Trp Glu
1 5 10 15

02110 165
02110 15
02110 PPT
02110 Artificial Sequence

02120
02200 Description of Artificial Sequence: Synthetic

04000 165
Ala Arg Phe Ser Ser Arg Gly Met Thr Thr Trp Glu Leu Pro Gly
1 5 10 15

02110 166
02110 15
02110 PPT
02110 Artificial Sequence

02120
02200 Description of Artificial Sequence: Synthetic

04000 166
Ser Ser Arg Gly Met Thr Thr Trp Glu Leu Pro Gly Gly Tyr Gly

<220>

<220> Description of Artificial Sequence: Synthetic

<400> 171

Arg Met Lys Pro Asp Ile Val Thr Tyr Gly Ala Gly Val Arg Gly
1 5 10 15

<400> 172

<210> 15

<210> PPT

<210> Artificial Sequence

<220>

<220> Description of Artificial Sequence: Synthetic

<400> 172

Pro Asp Ile Val Thr Tyr Gly Ala Gly Val Arg Gly Ser Gly Val
1 5 10 15

<400> 173

<210> 15

<210> PPT

<210> Artificial Sequence

<220>

<220> Description of Artificial Sequence: Synthetic

<400> 173

Val Thr Tyr Gly Ala Gly Val Arg Gly Ser Gly Val Lys Gly Gly
1 5 10 15

<400> 174

<210> 15

<210> PPT

<210> Artificial Sequence

<220>

<220> Description of Artificial Sequence: Synthetic

<400> 174

Gly Ala Gly Val Arg Gly Ser Gly Val Lys Gly Gly Cys Arg Ala
1 5 10 15

<400> 175

<210> 15

<210> PPT

<210> Artificial Sequence

<220>

<220> Description of Artificial Sequence: Synthetic

<400> 175

Val Arg Gly Ser Gly Val Lys Gly Gly Cys Arg Ala Leu Ser Gly
1 5 10 15

Q2100 176
Q2110 15
Q2120 PFT
Q2130 Artificial Sequence

Q2140
Q2150 Description of Artificial Sequence: Synthetic

Q4000 176
Ser Gly Val Lys Gly Gly Cys Arg Ala Leu Ser Gly Thr Ser Val
1 5 10 15

Q2160 177
Q2170 15
Q2180 PFT
Q2190 Artificial Sequence

Q2200
Q2210 Description of Artificial Sequence: Synthetic

Q4000 177
Lys Gly Gly Cys Arg Ala Leu Ser Gly Thr Ser Val Ala Ser Pro
1 5 10 15

Q2260 178
Q2270 15
Q2280 PFT
Q2290 Artificial Sequence

Q2300
Q2310 Description of Artificial Sequence: Synthetic

Q4000 178
Lys Arg Ala Leu Ser Gly Thr Ser Val Ala Ser Pro Val Val Ala
1 5 10 15

Q2360 179
Q2370 15
Q2380 PFT
Q2390 Artificial Sequence

Q2400
Q2410 Description of Artificial Sequence: Synthetic

Q4000 179
Leu Ser Gly Thr Ser Val Ala Ser Pro Val Val Ala Gly Ala Val
1 5 10 15

Q2460 180
Q2470 15
Q2480 PFT
Q2490 Artificial Sequence

Q2500
Q2510 Description of Artificial Sequence: Synthetic

<400> 180
 Thr Ser Val Ala Ser Pro Val Val Ala Gly Ala Val Thr Leu Leu
 1 5 10 15

<210> 181
 <211> 18
 <212> PFT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 181
 Ala Ser Pro Val Val Ala Gly Ala Val Thr Leu Leu Val Ser Thr
 1 5 10 15

<210> 182
 <211> 18
 <212> PFT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 182
 Val Val Ala Gly Ala Val Thr Leu Leu Val Ser Thr Val Gln Lys
 1 5 10 15

<210> 183
 <211> 18
 <212> PFT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 183
 Gly Ala Val Thr Leu Leu Val Ser Thr Val Gln Lys Arg Glu Leu
 1 5 10 15

<210> 184
 <211> 18
 <212> PFT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic

<400> 184
 Thr Leu Leu Val Ser Thr Val Gln Lys Arg Glu Leu Val Asn Pro
 1 5 10 15

<210> 185
 <211> 18
 <212> PFT

00130 Artificial Sequence

0200

00130 Description of Artificial Sequence: Synthetic

0400 185

Val Ser Thr Val Gln Lys Arg Glu Leu Val Asn Pro Ala Ser Met
1 5 10 15

00100 186

00110 15

00120 PPT

00130 Artificial Sequence

0200

00130 Description of Artificial Sequence: Synthetic

0400 186

Val Gln Lys Arg Glu Leu Val Asn Pro Ala Ser Met Lys Gln Ala
1 5 10 15

00100 187

00110 15

00120 PPT

00130 Artificial Sequence

0200

00130 Description of Artificial Sequence: Synthetic

0400 187

Arg Glu Leu Val Asn Pro Ala Ser Met Lys Gln Ala Leu Ile Ala
1 5 10 15

00100 188

00110 15

00120 PPT

00130 Artificial Sequence

0200

00130 Description of Artificial Sequence: Synthetic

0400 188

Val Asn Pro Ala Ser Met Lys Gln Ala Leu Ile Ala Ser Ala Arg
1 5 10 15

00100 189

00110 15

00120 PPT

00130 Artificial Sequence

0200

00130 Description of Artificial Sequence: Synthetic

0400 189

Ala Ser Met Lys Gln Ala Leu Ile Ala Ser Ala Arg Arg Leu Pro
1 5 10 15

<110> 190
<111> 15
<112> PFT
<113> Artificial Sequence

<200>
<220> Description of Artificial Sequence: Synthetic

<400> 190
Lys Gln Ala Leu Ile Ala Ser Ala Arg Arg Leu Pro Gly Val Asn
1 5 10 15

<110> 191
<111> 15
<112> PFT
<113> Artificial Sequence

<200>
<220> Description of Artificial Sequence: Synthetic

<400> 191
Leu Ile Ala Ser Ala Arg Arg Leu Pro Gly Val Asn Met Phe Glu
1 5 10 15

<110> 192
<111> 15
<112> PFT
<113> Artificial Sequence

<200>
<220> Description of Artificial Sequence: Synthetic

<400> 192
Ser Ala Arg Arg Leu Pro Gly Val Asn Met Phe Glu Gln Gly His
1 5 10 15

<110> 193
<111> 15
<112> PFT
<113> Artificial Sequence

<200>
<220> Description of Artificial Sequence: Synthetic

<400> 193
Arg Leu Pro Gly Val Asn Met Phe Glu Gln Gly His Gly Lys Leu
1 5 10 15

<110> 194
<111> 15
<112> PFT
<113> Artificial Sequence

<220>

Q1200 Description of Artificial Sequence: Synthetic

Q1200 194

Gly Val Asn Met Phe Glu Gln Gly His Gly Lys Leu Asp Leu Leu
1 5 10 15

Q1200 195

Q1200 15

Q1200 PPT

Q1200 Artificial Sequence

Q1200

Q1200 Description of Artificial Sequence: Synthetic

Q1200 195

Met Phe Glu Gln Gly His Gly Lys Leu Asp Leu Leu Arg Ala Tyr
1 5 10 15

Q1200 196

Q1200 15

Q1200 PPT

Q1200 Artificial Sequence

Q1200

Q1200 Description of Artificial Sequence: Synthetic

Q1200 196

Gln Gly His Gly Lys Leu Asp Leu Leu Arg Ala Tyr Gln Ile Leu
1 5 10 15

Q1200 197

Q1200 15

Q1200 PPT

Q1200 Artificial Sequence

Q1200

Q1200 Description of Artificial Sequence: Synthetic

Q1200 197

Gly Lys Leu Asp Leu Leu Arg Ala Tyr Gln Ile Leu Asn Ser Tyr
1 5 10 15

Q1200 198

Q1200 15

Q1200 PPT

Q1200 Artificial Sequence

Q1200

Q1200 Description of Artificial Sequence: Synthetic

Q1200 198

Asp Leu Leu Arg Ala Tyr Gln Ile Leu Asn Ser Tyr Lys Pro Gln
1 5 10 15

Q1200 199

<211> 15
<212> PFT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 199
Arg Ala Tyr Gln Ile Leu Asn Ser Tyr Lys Pro Gln Ala Ser Leu
1 5 10 15

<211> 100
<212> 15
<213> PFT
<214> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 200
Gln Ile Leu Asn Ser Tyr Lys Pro Gln Ala Ser Leu Ser Pro Ser
1 5 10 15

<211> 101
<212> 15
<213> PFT
<214> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 201
Asn Ser Tyr Lys Pro Gln Ala Ser Leu Ser Pro Ser Tyr Ile Asp
1 5 10 15

<211> 102
<212> 15
<213> PFT
<214> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 202
Lys Pro Gln Ala Ser Leu Ser Pro Ser Tyr Ile Asp Leu Thr Glu
1 5 10 15

<211> 203
<212> 15
<213> PFT
<214> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 203

Ala Ser Leu Ser Pro Ser Tyr Ile Asp Leu Thr Glu Cys Pro Tyr
 1 3 10 15

<210> 204

<211> 15

<212> PFT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 114

Ser Pro Ser Tyr Ile Asp Leu Thr Glu Cys Pro Tyr Met Trp Pro
 1 3 10 15

<210> 105

<211> 15

<212> PFT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 115

Tyr Ile Asp Leu Thr Glu Cys Pro Tyr Met Trp Pro Tyr Cys Ser
 1 3 10 15

<210> 106

<211> 15

<212> PFT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 116

Leu Thr Glu Cys Pro Tyr Met Trp Pro Tyr Cys Ser Gln Pro Ile
 1 3 10 15

<210> 117

<211> 15

<212> PFT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 117

Cys Pro Tyr Met Trp Pro Tyr Cys Ser Gln Pro Ile Tyr Tyr Gly
 1 3 10 15

<210> 108

<211> 1352

<212> PFT

<213> Homo sapiens

4400> 208

Met	Lys	Leu	Val	Asn	Ile	Trp	Leu	Leu	Leu	Leu	Val	Val	Leu	Leu	Cys
1				5					10					15	
Gly	Lys	Lys	His	Leu	Gly	Asp	Arg	Leu	Glu	Lys	Lys	Ser	Phe	Glu	Lys
			20					25					30		
Ala	Pro	Cys	Pro	Gly	Cys	Ser	His	Leu	Thr	Leu	Lys	Val	Glu	Phe	Ser
		35					40					45			
Ser	Thr	Val	Val	Glu	Tyr	Glu	Tyr	Ile	Val	Ala	Phe	Asn	Gly	Tyr	Phe
	50					55					60				
Thr	Ala	Lys	Ala	Arg	Asn	Ser	Phe	Ile	Ser	Ser	Ala	Leu	Lys	Ser	Ser
65				70					75						80
Glu	Val	Asp	Asn	Trp	Arg	Ile	Ile	Pro	Arg	Asn	Asn	Pro	Ser	Ser	Asp
			85					90						95	
Tyr	Pro	Ser	Asp	Phe	Glu	Val	Ile	Gln	Ile	Lys	Glu	Lys	Gln	Lys	Ala
			100					105					110		
Gly	Leu	Leu	Thr	Leu	Glu	Asp	His	Pro	Asn	Ile	Lys	Arg	Val	Thr	Pro
	115						120					125			
Gln	Arg	Lys	Val	Phe	Arg	Ser	Leu	Lys	Tyr	Ala	Glu	Ser	Asp	Pro	Thr
	130					135					140				
Val	Pro	Cys	Asn	Glu	Thr	Arg	Trp	Ser	Gln	Lys	Trp	Gln	Ser	Ser	Arg
145				150					155						160
Pro	Leu	Arg	Arg	Ala	Ser	Leu	Ser	Leu	Gly	Ser	Gly	Phe	Trp	His	Ala
				165					170					175	
Thr	Gly	Arg	His	Ser	Ser	Arg	Arg	Leu	Leu	Arg	Ala	Ile	Pro	Arg	Gln
			180					185					190		
Val	Ala	Gln	Thr	Leu	Gln	Ala	Asp	Val	Leu	Trp	Gln	Met	Gly	Tyr	Thr
	195						200					205			
Gly	Ala	Asn	Val	Arg	Val	Ala	Val	Phe	Asp	Thr	Gly	Leu	Ser	Gln	Lys
	210					215					220				
His	Pro	His	Phe	Lys	Asn	Val	Lys	Glu	Arg	Thr	Asn	Trp	Thr	Asn	Glu
225					230					235					240
Arg	Thr	Leu	Asp	Asp	Gly	Leu	Gly	His	Gly	Thr	Phe	Val	Ala	Gly	Val
			245						250					255	
Ile	Ala	Ser	Met	Arg	Glu	Lys	Gln	Gly	Phe	Ala	Pro	Asp	Ala	Glu	Leu
			260					265					270		
His	Ile	Phe	Arg	Val	Phe	Thr	Asn	Asn	Gln	Val	Ser	Tyr	Thr	Ser	Trp
		275					280					285			
Phe	Leu	Asp	Ala	Phe	Asn	Tyr	Ala	Ile	Leu	Lys	Lys	Ile	Asp	Val	Leu
	290					295					300				
Asn	Leu	Ser	Ile	Gly	Gly	Pro	Asp	Phe	Met	Asp	His	Pro	Phe	Val	Asp

315		310		315		320
Lys Val Trp Glu Leu Thr Ala Asn Asn Val Ile Met Val Ser Ala Ile						
	325			330		335
Gly Asn Asp Gly Pro Leu Tyr Gly Thr Leu Asn Asn Pro Ala Asp Gln						
	340			345		350
Met Asp Val Ile Gly Val Gly Gly Ile Asp Phe Glu Asp Asn Ile Ala						
	355			360		365
Arg Phe Ser Ser Arg Gly Met Thr Thr Trp Glu Leu Pro Gly Gly Tyr						
	370			375		380
Gly Arg Met Lys Pro Asp Ile Val Thr Tyr Gly Ala Gly Val Arg Gly						
	385			390		400
Ser Gly Val Lys Gly Gly Cys Arg Ala Leu Ser Gly Thr Ser Val Ala						
	405			410		415
Ser Pro Val Val Ala Gly Ala Val Thr Leu Leu Val Ser Thr Val Gln						
	420			425		430
Lys Arg Glu Leu Val Asn Pro Ala Ser Met Lys Gln Ala Leu Ile Ala						
	435			440		445
Ser Ala Arg Arg Leu Pro Gly Val Asn Met Phe Glu Gln Gly His Gly						
	450			455		460
Lys Leu Asp Leu Leu Arg Ala Tyr Gln Ile Leu Asn Ser Tyr Lys Pro						
	465			470		475
Gln Ala Ser Leu Ser Pro Ser Tyr Ile Asp Leu Thr Gln Cys Pro Tyr						
	480			485		490
Met Trp Pro Tyr Cys Ser Gln Pro Ile Tyr Tyr Gly Gly Met Pro Thr						
	500			505		510
Val Val Asn Val Thr Ile Leu Asn Gly Met Gly Val Thr Gly Arg Ile						
	515			520		525
Val Asp Lys Pro Asp Trp Gln Pro Tyr Leu Pro Gln Asn Gly Asp Asn						
	530			535		540
Ile Glu Val Ala Phe Ser Tyr Ser Ser Val Leu Trp Pro Trp Ser Gly						
	545			550		555
Tyr Leu Ala Ile Ser Ile Ser Val Thr Lys Lys Ala Ala Ser Trp Gln						
	560			565		570
Gly Ile Ala Gln Gly His Val Met Ile Thr Val Ala Ser Pro Ala Gln						
	575			580		585
Thr Glu Ser Lys Asn Gly Ala Glu Gln Thr Ser Thr Val Lys Leu Pro						
	590			595		600
Ile Lys Val Lys Ile Ile Pro Thr Pro Pro Arg Ser Lys Arg Val Leu						
	605			610		615
Trp Asp Gln Tyr His Asn Leu Arg Tyr Pro Pro Gly Tyr Phe Pro Arg						

625	630	635	640
Asp Asn Leu Arg Met Lys Asn Asp Pro Leu Asp Trp Asn Gly Asp His	645	650	655
Ile His Thr Asn Phe Arg Asp Met Tyr Gln His Leu Arg Ser Met Gly	660	665	670
Tyr Phe Val Glu Val Leu Gly Ala Pro Phe Thr Cys Phe Asp Ala Ser	675	680	685
Gln Tyr Gly Thr Leu Leu Met Val Asp Ser Glu Glu Glu Tyr Phe Pro	690	695	700
Glu Glu Ile Ala Lys Leu Arg Arg Asp Val Asp Asn Gly Leu Ser Leu	705	710	715
Val Ile Phe Ser Asp Trp Tyr Asn Thr Ser Val Met Arg Lys Val Lys	725	730	735
Phe Tyr Asp Glu Asn Thr Arg Gln Trp Trp Met Pro Asp Thr Gly Gly	740	745	750
Ala Asn Ile Pro Ala Leu Asn Glu Leu Leu Ser Val Trp Asn Met Gly	755	760	765
Phe Ser Asp Gly Leu Tyr Glu Gly Glu Phe Thr Leu Ala Asn His Asp	770	775	780
Met Tyr Tyr Ala Ser Gly Cys Ser Ile Ala Lys Phe Pro Glu Asp Gly	785	790	795
Val Val Ile Thr Gln Thr Phe Lys Asp Gln Gly Leu Glu Val Leu Lys	805	810	815
Gln Glu Thr Ala Val Val Glu Asn Val Pro Ile Leu Gly Leu Tyr Gln	820	825	830
Ile Pro Ala Glu Gly Gly Gly Arg Ile Val Leu Tyr Gly Asp Ser Asn	835	840	845
Cys Leu Asp Asp Ser His Arg Gln Lys Asp Cys Phe Trp Leu Leu Asp	850	855	860
Ala Leu Leu Gln Tyr Thr Ser Tyr Gly Val Thr Pro Pro Ser Leu Ser	865	870	875
His Ser Gly Asn Arg Gln Arg Pro Pro Ser Gly Ala Gly Ser Val Thr	880	885	890
Pro Glu Arg Met Glu Gly Asn His Leu His Arg Tyr Ser Lys Val Leu	890	900	910
Glu Ala His Leu Gly Asp Pro Lys Pro Arg Pro Leu Pro Ala Cys Pro	915	920	925
Arg Leu Ser Trp Ala Lys Pro Gln Pro Leu Asn Glu Thr Ala Pro Ser	930	935	940
Asn Leu Trp Lys His Gln Lys Leu Leu Ser Ile Asp Leu Asp Lys Val			

945	950	955	960
Val Leu Pro Asn Phe Arg Ser Asn Arg Pro Gln Val Arg Pro Leu Ser	965	970	975
Pro Gly Glu Ser Gly Ala Trp Asp Ile Pro Gly Gly Ile Met Pro Gly	980	985	990
Arg Tyr Asn Gln Glu Val Gly Gln Thr Ile Pro Val Phe Ala Phe Leu	995	1000	1005
Gly Ala Met Val Val Leu Ala Phe Phe Val Val Gln Ile Asn Lys Ala	1010	1015	1020
Lys Ser Arg Pro Lys Arg Arg Lys Pro Arg Val Lys Arg Pro Gln Leu	1025	1030	1035
Met Glu Gln Val His Pro Pro Lys Thr Pro Ser Val	1045	1050	

<210> 109
 <211> 280
 <212> PRT
 <213> Homo sapiens

Arg Ala Ile Pro Arg Gln Val Ala Gln Thr Leu Gln Ala Asp Val Leu	1	5	10	15
Trp Gln Met Gly Tyr Thr Gly Ala Asn Val Arg Val Ala Val Phe Asp	20	25	30	
Thr Gly Leu Ser Glu Lys His Pro His Phe Lys Asn Val Lys Glu Arg	35	40	45	
Thr Asn Trp Thr Asn Glu Arg Thr Leu Asp Asp Gly Leu Gly His Gly	50	55	60	
Thr Phe Val Ala Gly Val Ile Ala Ser Met Arg Glu Cys Gln Gly Phe	65	70	75	80
Ala Pro Asp Ala Glu Leu His Ile Phe Arg Val Phe Thr Asn Asn Gln	85	90	95	
Val Ser Tyr Thr Ser Trp Phe Leu Asp Ala Phe Asn Tyr Ala Ile Leu	100	105	110	
Lys Lys Ile Asp Val Leu Asn Leu Ser Ile Gly Gly Pro Asp Phe Met	115	120	125	
Asp His Pro Phe Val Asp Lys Val Trp Glu Leu Thr Ala Asn Asn Val	130	135	140	
Ile Met Val Ser Ala Ile Gly Asn Asp Gly Pro Leu Tyr Gly Thr Leu	145	150	155	160
Asn Asn Pro Ala Asp Gln Met Asp Val Ile Gly Val Gly Gly Ile Asp	165	170	175	

Phe Glu Asp Asn Ile Ala Arg Phe Ser Ser Arg Gly Met Thr Thr Trp
 180 185 190
 Glu Leu Pro Gly Gly Tyr Gly Arg Met Lys Pro Asp Ile Val Thr Tyr
 195 200 205
 Gly Ala Gly Val Arg Gly Ser Gly Val Lys Gly Gly Cys Arg Ala Leu
 210 215 220
 Ser Gly Thr Ser Val Ala Ser Pro Val Val Ala Gly Ala Val Thr Leu
 225 230 235 240
 Leu Val Ser Thr Val Gln Lys Arg Glu Leu Val Asn Pro Ala Ser Met
 245 250 255
 Lys Gln Ala Leu Ile Ala Ser Ala Arg Arg Leu Pro Gly Val Asn Met
 260 265 270
 Phe Gln Gln Gly His Gly Lys Leu
 275 280

<210> 210
 <211> 15
 <212> PEST
 <213> Artificial Sequence

<210>
 <213> Description of Artificial Sequence: Synthetic

<400> 210
 Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val
 1 5 10 15

<210> 211
 <211> 15
 <212> PEST
 <213> Artificial Sequence

<210>
 <213> Description of Artificial Sequence: Synthetic

<400> 211
 Ala Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val
 1 5 10 15

<210> 212
 <211> 15
 <212> PEST
 <213> Artificial Sequence

<210>
 <213> Description of Artificial Sequence: Synthetic

<400> 212
 Gly Ala Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val
 1 5 10 15

<210> 213
<211> 15
<212> PPT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 213
Gly Ser Ala Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val
1 5 10 15

<210> 214
<211> 15
<212> PPT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 214
Gly Ser Ile Ala Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val
1 5 10 15

<210> 215
<211> 15
<212> PPT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 215
Gly Ser Ile Ser Ala Pro Ala Arg Tyr Ala Asn Ala Met Ala Val
1 5 10 15

<210> 216
<211> 15
<212> PPT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 216
Gly Ser Ile Ser Tyr Ala Ala Arg Tyr Ala Asn Ala Met Ala Val
1 5 10 15

<210> 217
<211> 15
<212> PPT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<470> 217

Gly Ser Ile Ser Tyr Pro Ala Ala Tyr Ala Asn Ala Met Ala Val
1 5 10 15

<210> 218

<211> 15

<212> PPT

<213> Artificial Sequence

<214>

<215> Description of Artificial Sequence: Synthetic

<470> 218

Gly Ser Ile Ser Tyr Pro Ala Arg Ala Ala Asn Ala Met Ala Val
1 5 10 15

<210> 219

<211> 15

<212> PPT

<213> Artificial Sequence

<214>

<215> Description of Artificial Sequence: Synthetic

<470> 219

Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Ala Ala Met Ala Val
1 5 10 15

<210> 220

<211> 15

<212> PPT

<213> Artificial Sequence

<214>

<215> Description of Artificial Sequence: Synthetic

<470> 220

Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Ala Ala Val
1 5 10 15

<210> 221

<211> 15

<212> PPT

<213> Artificial Sequence

<214>

<215> Description of Artificial Sequence: Synthetic

<470> 221

Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Ala
1 5 10 15

<210> 222

<211> 15

02120 PBT
02130 Humicola insolens

04000 021
Pro Gly Gly Val Ala Tyr Ser Cys Ala Asp Gln Thr Pro Trp Ala
1 5 10 15

02100 023
02110 PBT
02120 PBT
02130 Humicola insolens

04000 023
Cys Gly Trp Ala Lys Lys Ala Pro Val Asn Gln Pro Val Phe Ser
1 5 10 15

02100 024
02110 076
02120 PBT
02130 Humicola insolens

04000 024
Met Arg Ser Ser Pro Leu Leu Pro Ser Ala Val Val Ala Ala Leu Pro
1 5 10 15

Val Leu Ala Leu Ala Ala Asp Gly Arg Ser Thr Arg Tyr Trp Asp Cys
20 25 30

Cys Lys Pro Ser Cys Gly Trp Ala Lys Lys Ala Pro Val Asn Gln Pro
35 40 45

Val Phe Ser Cys Asn Ala Asn Phe Gln Arg Ile Thr Asp Phe Asp Ala
5 55 60

Lys Ser Gly Cys Glu Pro Gly Gly Val Ala Tyr Ser Cys Ala Asp Gln
65 70 75 80

Thr Pro Trp Ala Val Asn Asp Asp Phe Ala Leu Gly Phe Ala Ala Thr
85 90 95

Ser Ile Ala Gly Ser Asn Glu Ala Gly Trp Cys Cys Ala Cys Tyr Glu
100 105 110

Leu Thr Phe Thr Ser Gly Pro Val Ala Gly Lys Lys Met Val Val Gln
115 120 125

Ser Thr Ser Thr Gly Gly Asp Leu Gly Ser Asn His Phe Asp Leu Asn
130 135 140

Ile Arg Gly Gly Gly Val Gly Ile Phe Asp Gly Cys Thr Pro Gln Phe
145 150 155 160

Gly Gly Leu Pro Gly Gln Arg Tyr Gly Gly Ile Ser Ser Arg Asn Gln
165 170 175

Cys Asp Arg Phe Pro Asp Ala Leu Lys Pro Gly Cys Tyr Trp Arg Phe
180 185 190

Asp Trp Phe Lys Asn Ala Asp Asn Pro Ser Phe Ser Phe Arg Gln Val
 195 200 205
 His Cys Pro Ala Glu Leu Val Ala Arg Thr Gly Cys Arg Arg Asn Asp
 210 215 220
 Asp Gly Asn Phe Pro Ala Val Gln Ile Pro Ser Ser Ser Thr Ser Ser
 225 230 235 240
 Pro Val Asn Gln Pro Thr Ser Thr Ser Thr Ser Thr Ser Thr Thr
 245 250 255
 Ser Ser Pro Pro Val Gln Pro Thr Thr Pro Ser Gly Cys Thr Ala Glu
 260 265 270
 Arg Trp Ala Gln
 275

<110> 225
 <111> 19
 <112> PPT
 <113> Thermomyces lanuginosus

<110> 226
 Gly Asp Val Thr Gly Phe Leu Ala Leu Asp Asn Thr Asn Lys Leu Ile
 1 5 10 15
 Val Leu

<110> 226
 <111> 15
 <112> PPT
 <113> Thermomyces lanuginosus

<110> 227
 Ser Ile Glu Asn Trp Ile Gly Asn Leu Asn Phe Asp Leu Lys Glu
 1 5 10 15

<110> 227
 <111> 291
 <112> PPT
 <113> Thermomyces lanuginosus

<110> 227
 Met Arg Ser Ser Leu Val Leu Phe Phe Val Ser Ala Trp Thr Ala Leu
 1 5 10 15
 Ala Ser Pro Ile Arg Arg Glu Val Ser Gln Asp Leu Phe Asn Gln Phe
 20 25 30
 Asn Leu Phe Ala Gln Tyr Ser Ala Ala Ala Tyr Cys Gly Lys Asn Asn
 35 40 45
 Asp Ala Pro Ala Gly Thr Asn Ile Thr Cys Thr Gly Asn Ala Cys Pro
 50 55 60

Glu Val Glu Lys Ala Asp Ala Thr Phe Leu Tyr Ser Phe Glu Asp Ser
 65 71 75 80
 Gly Val Gly Asp Val Thr Gly Phe Leu Ala Leu Asp Asn Thr Asn Lys
 85 90 95
 Leu Ile Val Leu Ser Phe Arg Gly Ser Arg Ser Ile Glu Asn Trp Ile
 100 105 110
 Gly Asn Leu Asn Phe Asp Leu Lys Glu Ile Asn Asp Ile Cys Ser Gly
 115 120 125
 Cys Arg Gly His Asp Gly Phe Thr Ser Ser Trp Arg Ser Val Ala Asp
 130 135 140
 Thr Leu Arg Gln Lys Val Glu Asp Ala Val Arg Glu His Pro Asp Tyr
 145 150 155 160
 Arg Val Val Phe Thr Gly His Ser Leu Gly Gly Ala Leu Ala Thr Val
 165 170 175
 Ala Gly Ala Asp Leu Arg Gly Asn Gly Tyr Asp Ile Asp Val Phe Ser
 180 185 190
 Tyr Gly Ala Pro Arg Val Gly Asn Arg Ala Phe Ala Glu Phe Leu Thr
 195 200 205
 Val Gln Thr Gly Gly Thr Leu Tyr Arg Ile Thr His Thr Asn Asp Ile
 210 215 220
 Val Pro Arg Leu Pro Pro Arg Glu Phe Gly Tyr Ser His Ser Ser Pro
 225 230 235 240
 Glu Tyr Trp Ile Lys Ser Gly Thr Leu Val Pro Val Thr Arg Asn Asp
 245 250 255
 Ile Val Lys Ile Glu Gly Ile Asp Ala Thr Gly Gly Asn Asn Gln Pro
 260 265 270
 Asn Ile Pro Asp Ile Pro Ala His Leu Trp Tyr Phe Gly Leu Ile Gly
 275 280 285
 Thr Lys Leu
 290

0110-128

0111-18

0112-PRT

0113-Streptomyces plicatus

0110-228

Ile Lys Val Leu Leu Ser Val Leu Gly Asn His Gln Gly Ala Gly
 1 5 10 15

0110-229

0111-313

0112-PRT

0113-Streptomyces plicatus

<400> 223

Met	Phe	Thr	Pro	Val	Arg	Arg	Arg	Val	Arg	Thr	Ala	Ala	Leu	Ala	Leu
1				5					10					15	
Ser	Ala	Ala	Ala	Ala	Leu	Val	Leu	Gly	Ser	Thr	Ala	Ala	Ser	Gly	Ala
			20					25					30		
Ser	Ala	Thr	Pro	Ser	Pro	Ala	Pro	Ala	Pro	Ala	Pro	Ala	Pro	Val	Lys
			35				40					45			
Gln	Gly	Pro	Thr	Ser	Val	Ala	Tyr	Val	Glu	Val	Asn	Asn	Asn	Ser	Met
	50					55					60				
Leu	Asn	Val	Gly	Lys	Tyr	Thr	Leu	Ala	Asp	Gly	Gly	Gly	Asn	Ala	Phe
65					70					75					80
Asp	Val	Ala	Val	Ile	Phe	Ala	Ala	Asn	Ile	Asn	Tyr	Asp	Thr	Gly	Thr
				85					90					95	
Lys	Thr	Ala	Tyr	Leu	His	Phe	Asn	Glu	Asn	Val	Gln	Arg	Val	Leu	Asp
			100					105					110		
Asn	Ala	Val	Thr	Gln	Ile	Arg	Pro	Leu	Gln	Gln	Gln	Gly	Ile	Lys	Val
		115					120					125			
Leu	Leu	Ser	Val	Leu	Gly	Asn	His	Gln	Gly	Ala	Gly	Phe	Ala	Asn	Phe
	130					135					140				
Pro	Ser	Gln	Gln	Ala	Ala	Ser	Ala	Phe	Ala	Lys	Gln	Leu	Ser	Asp	Ala
145				150						155					160
Val	Ala	Lys	Tyr	Gly	Leu	Asp	Gly	Val	Asp	Phe	Asp	Asp	Glu	Tyr	Ala
				165					170					175	
Glu	Tyr	Gly	Asn	Asn	Gly	Thr	Ala	Gln	Pro	Asn	Asp	Ser	Ser	Phe	Val
			180					185						190	
His	Leu	Val	Thr	Ala	Leu	Arg	Ala	Asn	Met	Pro	Asp	Lys	Ile	Ile	Ser
		195					200					205			
Leu	Tyr	Asn	Ile	Gly	Pro	Ala	Ala	Ser	Arg	Leu	Ser	Tyr	Gly	Gly	Val
	210					215					220				
Asp	Val	Ser	Asp	Lys	Phe	Asp	Tyr	Ala	Trp	Asn	Pro	Tyr	Tyr	Gly	Thr
225				230						235					240
Trp	Gln	Val	Pro	Gly	Ile	Ala	Leu	Pro	Lys	Ala	Gln	Leu	Ser	Pro	Ala
				245					250					255	
Ala	Val	Glu	Ile	Gly	Arg	Thr	Ser	Arg	Ser	Thr	Val	Ala	Asp	Leu	Ala
			260					265					270		
Arg	Arg	Thr	Val	Asp	Glu	Gly	Tyr	Gly	Val	Tyr	Leu	Thr	Tyr	Asn	Leu
			275				280						285		
Asp	Gly	Gly	Asp	Arg	Thr	Ala	Asp	Val	Ser	Ala	Phe	Thr	Arg	Glu	Leu
	290					295					300				
Tyr	Gly	Ser	Glu	Ala	Val	Arg	Thr	Pro							

305

310

Q110> 230

Q111> 15

Q112> PPT

Q113> Bacillus amyloliquefaciens

Q400> 230

Gly Thr Val Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly Val
 1 5 10 15

Q113> 231

Q114> 15

Q115> PPT

Q116> Bacillus amyloliquefaciens

Q400> 231

Asn Gly Ile Glu Trp Ala Ile Ala Asn Asn Met Asp Val Ile Asn
 1 5 10 15

Q116> 232

Q117> 15

Q118> PPT

Q119> Bacillus lentus

Q400> 232

Thr Gly Ser Gly Val Lys Val Ala Val Leu Asp Thr Gly Ile Ser
 1 5 10 15

Q119> 233

Q120> 15

Q121> PPT

Q122> Bacillus lentus

Q400> 233

Ser Ala Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Ser
 1 5 10 15

Q122> 234

Q123> 17

Q124> PPT

Q125> Bacillus lentus

Q400> 234

Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val Gly
 1 5 10 15

Ala

Q125> 235

Q126> 15

Q127> PPT

Q128> Bacillus lentus

4430- 235

Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Asn Val Gln Ser
1 5 10 15

4410- 136

4411- 271

4412- PRT

4413- Artificial Sequence

4400-

4413- Description of Artificial Sequence: Hybrid of
Bacillus lentus and Bacillus amyloliquefaciens

4400- 136

Ala Gln Ser Val Pro Trp Gly Ile Ser Arg Val Gln Ala Pro Ala Ala
1 5 10 15

His Asn Arg Gly Leu Thr Gly Ser Gly Val Lys Val Ala Val Leu Asp
20 25 30

Thr Gly Ile Ser Thr His Pro Asp Leu Asn Ile Arg Gly Gly Ala Ser
35 40 45

Phe Val Pro Gly Glu Pro Ser Thr Gln Asp Gly Asn Gly His Gly Thr
50 55 60

His Val Ala Gly Thr Ile Ala Ala Leu Asn Asn Ser Ile Gly Val Leu
65 70 75 80

Gly Val Ala Pro Ser Ala Glu Leu Tyr Ala Val Lys Val Leu Gly Ala
85 90 95

Ser Gly Ser Gly Ser Val Ser Ser Ile Ala Gln Gly Leu Glu Trp Ala
100 105 110

Gly Asn Asn Gly Met His Val Ile Asn Met Ser Leu Gly Gly Ser Gly
115 120 125

Ser Ala Ala Leu Lys Ala Ala Val Asp Lys Ala Val Ala Ser Gly Val
130 135 140

Val Val Val Ala Ala Ala Gly Asn Glu Gly Thr Ser Gly Ser Ser Ser
145 150 155 160

Thr Val Gly Tyr Pro Gly Lys Tyr Pro Ser Val Ile Ala Val Gly Ala
165 170 175

Val Asp Ser Ser Asn Gln Arg Ala Ser Phe Ser Ser Val Gly Pro Glu
180 185 190

Leu Asp Val Met Ala Pro Gly Val Ser Ile Gln Ser Thr Leu Pro Gly
195 200 205

Asn Lys Tyr Gly Ala Tyr Asn Gly Thr Ser Met Ala Ser Pro His Val
210 215 220

Ala Gly Ala Ala Ala Leu Ile Leu Ser Lys His Pro Asn Trp Thr Asn
225 230 235 240

Thr Gln Val Arg Ser Ser Leu Glu Asn Thr Thr Thr Lys Leu Gly Asp
245 250 255

Ser Phe Tyr Tyr Gly Lys Gly Leu Ile Asn Val Gln Ala Ala Ala Gln
260 265 270